

FIG. 1 - Prior Art

$$C_{eff} \cdot V(T) = \sum_{k=1}^N C_k \cdot V_k(T) \quad \text{Eq. 1}$$

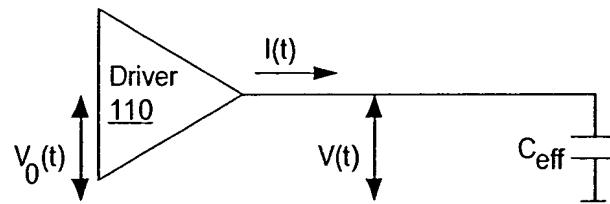
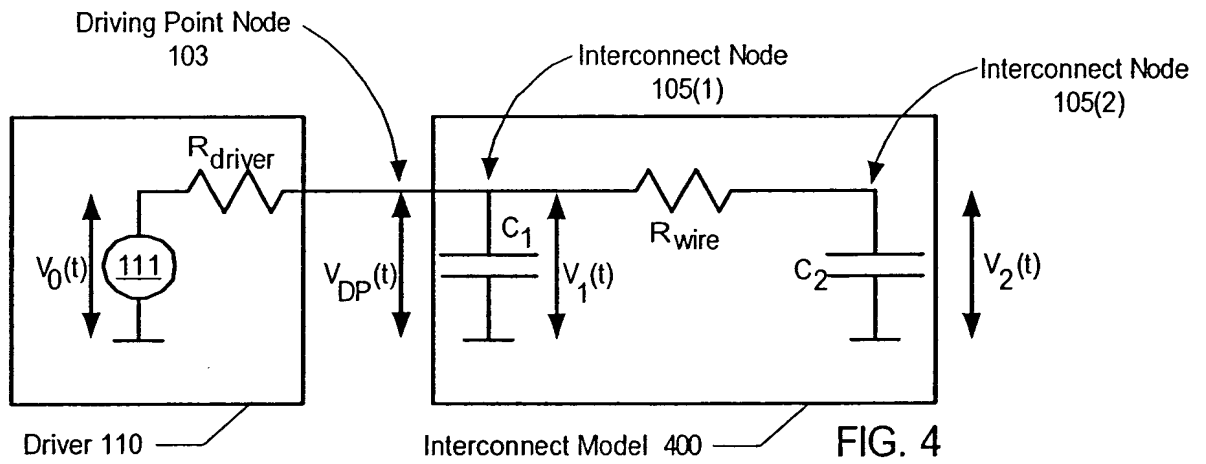


FIG. 2 - Prior Art

$$C_{eff} = \sum_{k=1}^N C_k \cdot \frac{V_k(T)}{V_{DP}(T)} \quad \text{Eq. 2}$$

FIG. 3



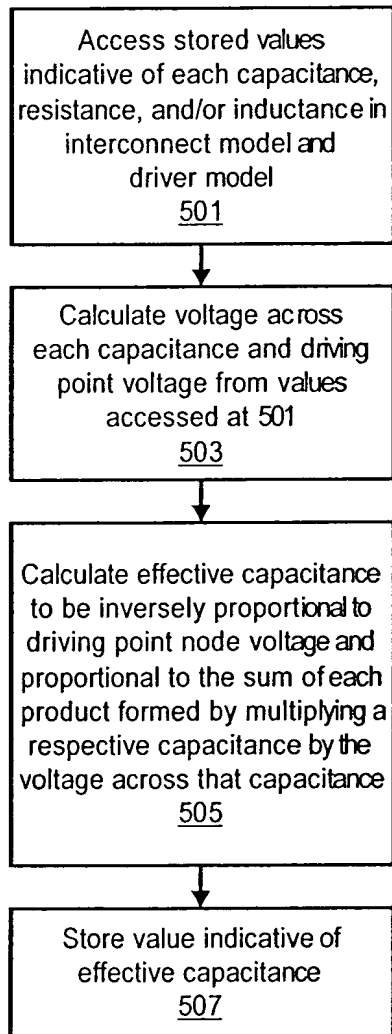


FIG. 5A

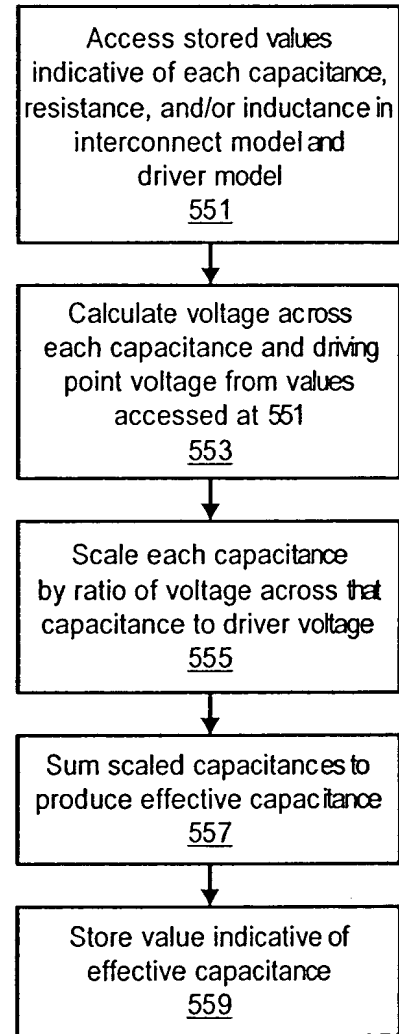


FIG. 5B

$$\text{Eqs. 3} \quad T_{11} = R_{\text{driver}} \cdot C1 \quad T_{12} = R_{\text{driver}} \cdot C2 \quad T_{22} = R_{\text{wire}} \cdot C2$$

$$\text{Eqs. 4} \quad T_{\text{Elmore}} = T_{11} + T_{12} + T_{22} \quad T_{\text{Root}} = \sqrt{T_{\text{Elmore}} - 4 \cdot T_{11} \cdot T_{22}}$$

$$\text{Eqs. 5} \quad s_{1,2} = \frac{\pm T_{\text{Root}} - T_{\text{Elmore}}}{2 \cdot T_{11} \cdot T_{22}}$$

$$\text{Eqs. 6} \quad \tau_1^1 = -\frac{1 + s_1 \cdot T_{22}}{T_{\text{Root}} \cdot s_1^2} \quad \tau_2^1 = \frac{1 + s_2 \cdot T_{22}}{T_{\text{Root}} \cdot s_2^2}$$

$$\tau_1^2 = -\frac{1}{T_{\text{Root}} \cdot s_1^2} \quad \tau_2^2 = \frac{1}{T_{\text{Root}} \cdot s_2^2}$$

$$\text{Eqs. 7} \quad V_1(t) = \begin{cases} 0 & t < 0 \\ \frac{1}{T} \cdot (t + \tau_1^1(1 - \exp(s_1 t)) + \tau_2^1(1 - \exp(s_2 t))) & 0 \leq t \leq T \\ 1 + \frac{1}{T} \cdot (\tau_1^1(1 - \exp(s_1 T)) \exp(s_1(t - T)) + \tau_2^1(1 - \exp(s_2 T)) \exp(s_2(t - T))) & T < t \end{cases}$$

$$V_2(t) = \begin{cases} 0 & t < 0 \\ \frac{1}{T} \cdot (t + \tau_1^2(1 - \exp(s_1 t)) + \tau_2^2(1 - \exp(s_2 t))) & 0 \leq t \leq T \\ 1 + \frac{1}{T} \cdot (\tau_1^2(1 - \exp(s_1 T)) \exp(s_1(t - T)) + \tau_2^2(1 - \exp(s_2 T)) \exp(s_2(t - T))) & T < t \end{cases}$$

$$\text{Eq. 8} \quad C_{\text{eff}} = C1 + C2 \cdot \frac{V_2(T)}{V_1(T)}$$

$$\text{Eq. 9} \quad C_{\text{eff}} = C1 + C2 \cdot \frac{T + \tau_1^2(1 - \exp(s_1 T)) + \tau_2^2(1 - \exp(s_2 T))}{T + \tau_1^1(1 - \exp(s_1 T)) + \tau_2^1(1 - \exp(s_2 T))}$$

FIG. 6

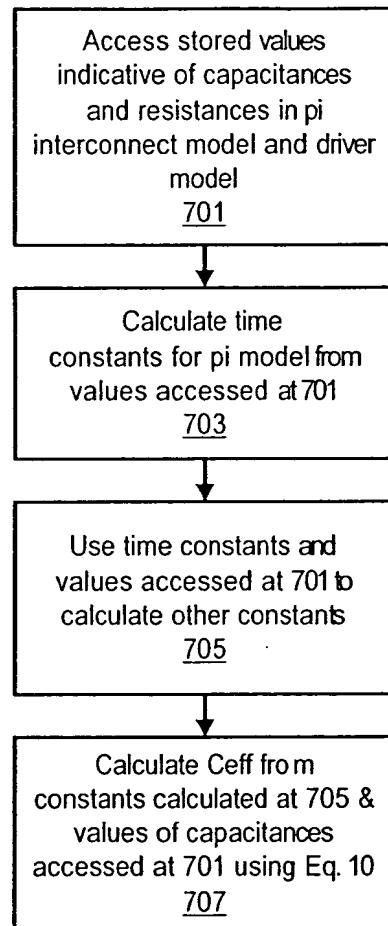


FIG. 7

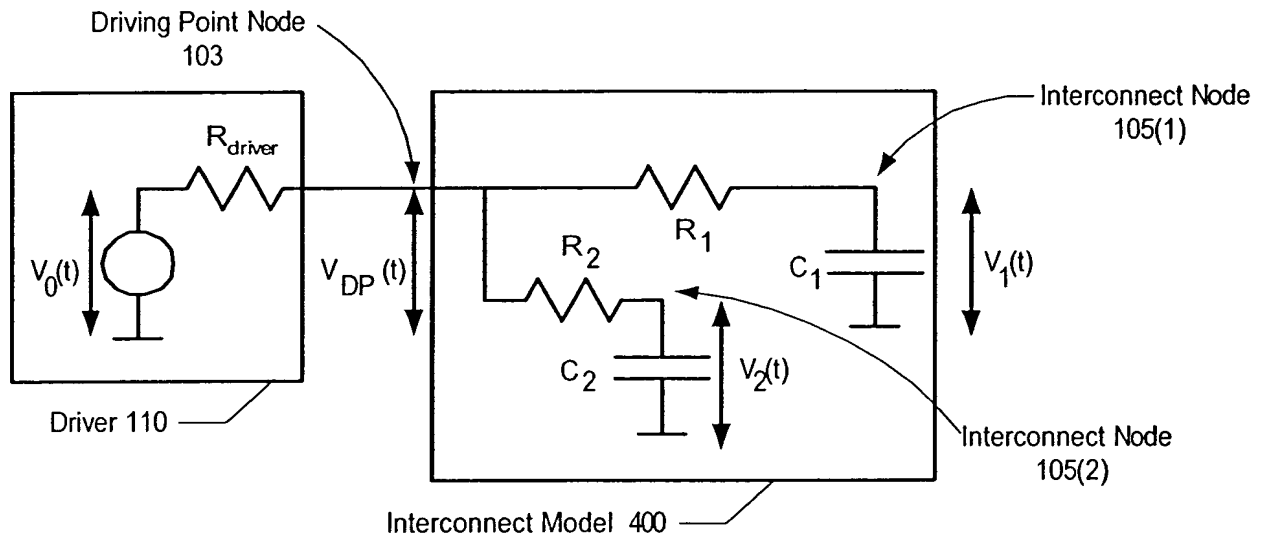


FIG. 8

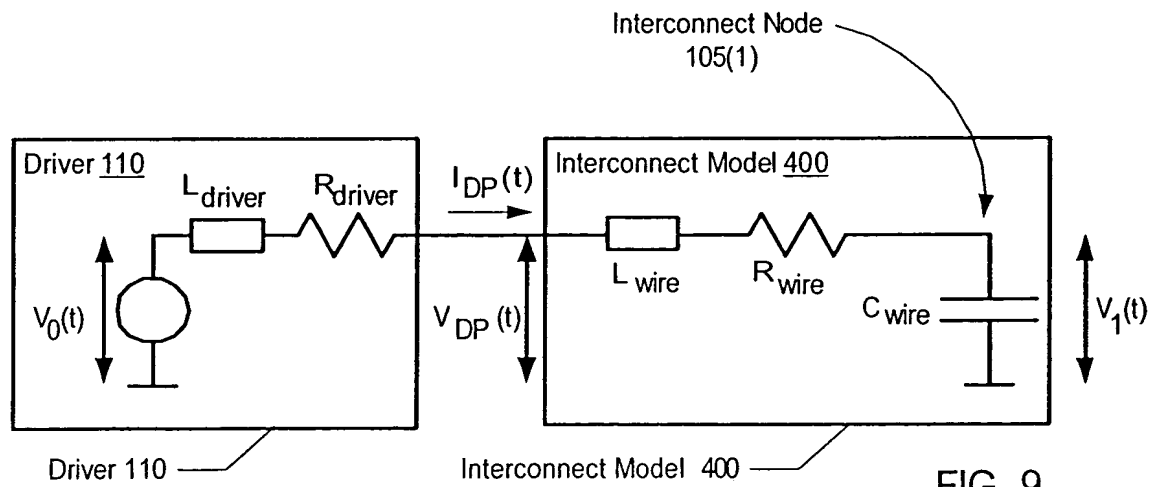


FIG. 9

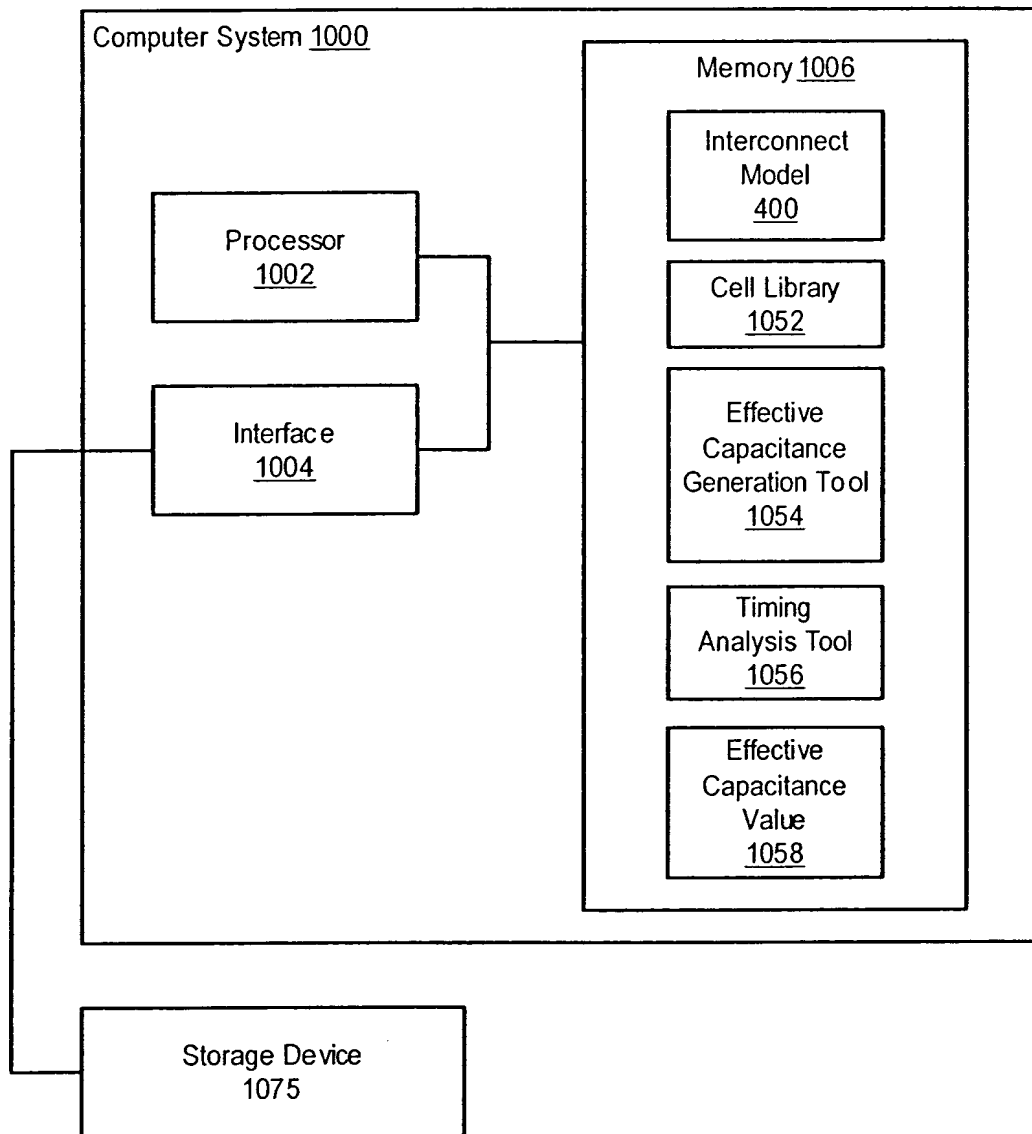


FIG. 10